

# PATENT COOPERATION TREATY

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## PCT

To:

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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/EP2004/009023

International filing date (day/month/year)  
12.08.2004

Priority date (day/month/year)  
22.08.2003

International Patent Classification (IPC) or both national classification and IPC  
C09C1/04, A61K7/00

Applicant  
DEGUSSA AG

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1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/EP2004/009023

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**Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/EP2004/009023

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	2-4
	No: Claims	1
Inventive step (IS)	Yes: Claims	
	No: Claims	1-4
Industrial applicability (IA)	Yes: Claims	1-4
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/EP2004/009023

AP2003000000 21 FEB 2006

The following documents (D) are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

- D1: US<sup>5</sup>486631 A (cited in the application)  
D2: XP002271154  
D3: EP1236773 A  
D4: EP 761774 A

1. Present claim 1 relates to an extremely large number of possible products. Support within the meaning of Article 6 PCT is to be found, however, for only a very small proportion of the products claimed. In the present case, the claims so lack support, and the application so lacks disclosure.

The application only provides support for a zinc oxide coated with an organo silane surface modifying agent.

**NOVELTY :**

2. Document D1, which is considered to represent the most relevant state of the art, discloses a method for surface treating zinc oxide with a silicone compound by adding to ZnO-powder between 0.1 wt% to 25wt% of silicone under mixing and heating the obtained intermediate to a temperature of between 40°C and 100°C for between 2 h and 10 h (see Example 12 (heating time 6h); column 5, line 60 to column 6, line 23).

It is assumed that the product of the process of D1 will have the same properties as the product of claim 1 of the present application.

The subject-matter of claim 1 is not new in the sense of Article 33(1) and (2) PCT.

**Inventive Step :**

3. Document D1 discloses a process for surface-modifying a ZnO, from which the subject-matter of claim 2 differs in that, the ZnO optionally after spraying with water, are sprayed with the surface-modifying agent.

- 3.1. In view of the distinguishing feature, no special technical effect has been shown in the application.
- 3.2. In the absence of such evidence, the problem underlying the application in view of the distinguishing feature can only be regarded as providing a further process for producing surface-modified ZnO.
- 3.3. The solution proposed in claim 2 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons:
- 3.4. Document D3 discloses a method for preparing a surface modified metal oxide, which can be ZnO, in that the metal oxides, optionally after spraying with water or an acid, are sprayed with the surface-modifying agent at room temperature and the mixture is then heat-treated at a temperature of 100 to 400 °C over a period of 0.5 to 6 h (example §71-72, claim 2).
- 3.5. It comes within the scope of the customary practice followed by persons skilled in the art, to adapt the process of D3 in such a way, as to obtain the product of claim 1 of the present application, especially as the advantages thus achieved can be readily contemplated in advance.
- 3.6. Dependent claim 3 does not appear to contain any additional features which, in combination with the features of any claim to which it refers, meet the requirements of the PCT with respect to inventive step.
4. Document D2 discloses a zinc oxide with a surface area of 18.3 m<sup>2</sup>/g, which is first treated with methyltriethoxysilane and second with carbon black to yield a surface treated ZnO with a surface area of 15.3 m<sup>2</sup>/g from which the subject-matter of claim 1 differs in that, the carbon content is 0.5 to 1.0 wt.%.
  - 4.1. In view of the distinguishing feature, no special technical effect has been shown in the application.

In the absence of such evidence, the problem underlying the application in view of the distinguishing feature can only be regarded as providing a further surface treated ZnO.

- 4.2. The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons:
- 4.3. The surface treated ZnO according to claim 1 differs from that known from document D2 only in that the feature "incorporating carbon black" has been omitted. Apart from the obviously and consequently simpler composition of the surface treated ZnO, the only result of the omission of feature "carbon black" is that the effect related to it is no longer present in the surface treated ZnO according to claim 1. Such a simplification does not involve an inventive step (Article 33(3) PCT).
5. Dependent claim 4 does not appear to contain any additional features which, in combination with the features of any claim to which it refers, meet the requirements of the PCT with respect to inventive step, as it is generally known to use surface-modified zinc oxides for the preparation of cosmetics (see D4, claim 5 and 7; page 2, line 5 to line 12)

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